

4.3 WATER RESOURCES

4.3.1 ALTERNATIVE A – PROPOSED CASINO AND HOTEL

SURFACE WATER, DRAINAGE, AND FLOODING

Drainage

The runoff characteristics of a watershed are altered when impervious surfaces replace natural vegetation, preventing infiltration into the soil. Runoff changes may increase stream volumes, increase stream velocities, increase peak discharges, shorten the rate of peak flows, and decrease groundwater contributions to stream base-flows during non-precipitation periods. Such changes can overwhelm storm drain systems and cause flooding. This is a potentially significant impact.

Construction of Alternative A would create additional impervious surfaces over approximately 7 acres of the project site, an increase from approximately 78 acres to approximately 85 acres of total buildings and pavement. To reduce the project's potential to increase surface runoff, impervious surfaces will be minimized to the greatest extent feasible. Where feasible, all areas outside of buildings and roads will be kept as permeable surfaces, either as vegetation or high infiltration cover such as mulch, gravel, or turf block. Pedestrian pathways will use a permeable surface where possible, such as crushed aggregate or stone with sufficient permeable joints (areas between stone or brick if used). Rooftops will drain into a piped storm system to maximize infiltration prior to concentrating runoff.

In the IGA, the Tribe has agreed to design storm sewer systems in accordance with the City's ordinances and specifications. Drainage from the project would flow through a network of storm sewers conveying runoff from north to south, discharging to a detention basin on the south side (Detention basin No. 1) and the west side (Detention basin No. 5) of the existing Dairyland Greyhound Park (DGP) for offsite discharge. **Figure 4.3-1** shows the proposed drainage areas for the project site and **Figure 4.3-2** shows a schematic of the proposed drainage subareas. Detention basin No. 1 is the existing detention basin in the southeast quadrant of the site that receives runoff from Drainage Subarea 10 and the outflow from Detention basin No. 3. Detention basin No. 2 is a wet depressional area located just west of the main entrance road that receives runoff from Drainage Subareas 30 and 35. Detention basin No. 3 is the large pond on the north side of the site that receives runoff from Detention basin No. 2 and from Drainage Subareas 40 and 45. Detention basin No. 4 is a pond/wetland complex located in Drainage Subarea 35 located west of the main north-south road that overflows to Drainage Subarea 30. Detention basin No. 5 is proposed to be a new detention basin to serve future development in the southwest quadrant of the site, occupied by Subarea 50.

The proposed storm sewer system would be laid out to minimize disturbance to the existing drainage system and proposed hydraulic conditions would be very similar to conditions that

INSERT FIGURE 4.3-1: Drainage Subareas

INSERT FIGURE 4.3-2: Schematic of drainage subareas

currently exist at the site. The storm sewer systems from the east side of the site will flow into Detention basin No. 1 in the south and Detention basin No. 3 in the north. Detention basin No. 3 will receive runoff from the main north-south road and the northeast corner of the proposed building.

Other storm sewers east of the main north-south road will drain to the existing Detention basin No. 1. Two storm sewer systems will be located in the east parking lot. One connects the existing storm sewer for the kennel area, and the other provides drainage for the parking lot and RV area. The third storm sewer system will be located on the west side of the proposed expansion to provide drainage for the casino, hotel, and parking structure. Stormwater from the main north-south road will flow to Detention basin No. 2 via storm sewer. There will be a storm sewer along with curb inlets, located along the main north-south road to collect roadway stormwater, discharging to Detention basin No. 2. New Detention basin No. 5 will be located just east of the Kilbourn Road Ditch. This detention basin will receive drainage from the future hotel storm sewer system. Three storm sewer systems will be located in the hotel and water park parking lots. **Figure 4.3-3** shows the proposed storm sewer system improvements.

Offsite stormwater discharge would occur at Detention basin No. 1 and Detention basin No. 4. Stormwater from Detention basin No. 1 currently discharges to a storm sewer beneath 60th Street in a southerly direction. The discharge then goes through a series of swales and detention basins and eventually discharges to the Kilbourn Road Ditch approximately 1,200 feet north of 75th Street. Offsite flow and discharge from Detention basin No. 1 would not change from existing conditions for the Proposed Alternative. Stormwater from Detention basin No. 5 will flow west offsite directly into a portion of the Kilbourn Road Ditch located onsite after discharging to a storm sewer beneath 60th Street.

A preliminary grading plan was additionally developed to follow the existing topography of the site, and to provide for proper drainage within the site. The location and floor elevations of existing buildings and roads were taken into account for the grading design to minimize grading work. **Figure 4.3-4** shows the preliminary grading plan for the proposed site.

Grading of the east side of the site will be similar to existing conditions, with most of the site draining to Detention basin No. 1 in the southeast corner of the site. Most of the site was graded with a two percent slope to maintain landscaping and prevent erosion, except for the future RV park area, which was graded a one percent slope to accommodate proper placement of RVs. Limited grading work will occur in the northeast corner of the site in proximity to the track and kennel area. The grading to the north and west of the building will allow water to drain away from the building towards Detention basin No. 3.

INSERT FIGURE 4.3-3: Storm sewer system improvements.

INSERT FIGURE 4.3-4: Preliminary Grading Plan

Preliminary cut and fill volumes were computed by comparing the existing and proposed contours across the entire site. Underground parking is proposed below the west side of the casino and the parking structure. The first floor elevations were lowered by 11 feet for the cut and fill calculations to account for the underground parking excavation. The output of the preliminary site layout resulted in approximately 9,600 cubic yards of excess material. The total build-out of the site will produce excess fill because of the need to match the grades of the proposed facilities with the existing building, and to maintain drainage to the detention basins. Excess fill is currently stored on the west side of the site in several mounded areas, but an opportunity may be available to place some of the excess material in the future hotel and water park area where a level pad for building will be required.

The location of the project site within the Des Plaines River Watershed is subject to special discharge requirements due to susceptible flooding conditions that exist near the southern end of the Des Plaines River. The Tribe has agreed in the IGA that storm sewer systems shall be designed and constructed in accordance with the City of Kenosha and Kenosha Water Utility ordinances and regulations.

The watershed specific criterion developed by the City permits allowable release rates of 0.04 cubic feet per second (cfs) per acre for a 2-year storm event and 0.30 cfs per acre for a 100-year storm event. When calculated with the acreage proposed for development (287.21 acres), the redeveloped site would have allowable release rates of 11.49 cfs per acre of drainage area for the two-year storm, and 86.16 cfs per acre for the 100-year storm. The NRCS Technical Release 55 (TR-55) methodology was used to determine peak flow rates and storage volumes for the site, in compliance with the City of Kenosha criteria (**Appendix C**). **Table 4.3-1** compares existing and proposed peak runoff rates to watershed specific design criteria.

TABLE 4.3-1
COMPARISON OF EXISTING AND PROPOSED CONDITIONS TO WATERSHED SPECIFIC DESIGN CRITERIA

	Existing Conditions		Proposed Conditions	
	2-Year	100-Year	2-Year	100-Year
Allowable Release Rate¹	10.3 cfs	77.5 cfs	11.49 cfs	86.16 cfs
Peak Runoff²	29.7 cfs	61.7 cfs	8.59 cfs	29.08 cfs

¹ Allowable release rates are based on the Des Plaines River Watershed specific criteria of 0.04 cfs/acre for a 2-year storm event and 0.30 cfs/acre for a 100-year storm event, calculated for the developed acreage for existing (258.36 acres) and proposed (287.21 acres) conditions.

² Does not include Subarea 60, which is not being developed.

SOURCE: Graef, Anhalt, Schloemer & Associates, Inc., 2004.

The existing peak runoff of discharge under a 2-year storm event for the areas proposed for development is estimated to be about 30 cfs. The existing conditions would not comply with the

2-year storm, based on current regulations. One reason that the existing developed site would not meet the current criteria is that the storage volume of the existing detention facility is not being fully utilized. To provide the necessary detention of runoff, the configuration of Detention basin No. 1 will be modified to accommodate the proposed site layout. With modifications proposed for the outlet structure of Detention basin No. 1, the peak runoff rate for a 100-year storm event would decrease discharge to 29.08 cfs, substantially improving performance by reducing peak discharge rates and maximizing storage volume. The computations in **Table 4.3-2** reflect these modifications. The basin outlet structure and Detention basin No. 5 would also be modified to comply with City standards using the structure configuration preferred by the City.

TABLE 4.3-2
COMPARISON OF EXISTING AND PROPOSED DETENTION BASIN PERFORMANCE

	Existing Conditions			Proposed Conditions		
	2-Year	10-Year	100-Year	2-Year	10-Year	100-Year
Detention basin No. 1						
Peak Inflow Rate	158.3 cfs	254.8 cfs	391.6 cfs	156.9 cfs	256.8 cfs	398.9 cfs
Peak Outflow Rate	29.1 cfs	44.6 cfs	59.5 cfs	7.8 cfs	19.7 cfs	24.9 cfs
Maximum Storage Volume Used	7.0 ac-ft	11.6 ac-ft	18.5 ac-ft	10.8 ac-ft	14.6 ac-ft	27.2 ac-ft
Detention basin No. 2						
Peak Inflow Rate	8.6 cfs	20.9 cfs	32.1 cfs	9.2 cfs	20.9 cfs	41.1 cfs
Peak Outflow Rate	1.9 cfs	3.1 cfs	3.3 cfs	2.0 cfs	3.1 cfs	4.1 cfs
Maximum Storage Volume Used	0.36ac-ft	1.7 ac-ft	2.0 ac-ft	0.7 ac-ft	1.7 ac-ft	3.7 ac-ft
Detention basin No. 3						
Peak Inflow Rate	74.5 cfs	155.4 cfs	288.9 cfs	63.4 cfs	142.5 cfs	275.9 cfs
Peak Outflow Rate	3.9 cfs	6.7 cfs	9.3 cfs	3.5 cfs	6.5 cfs	9.1 cfs
Maximum Storage Volume Used	6.7 ac-ft	13.7 ac-ft	26.4 ac-ft	6.1 ac-ft	12.7 ac-ft	25.2 ac-ft
Detention basin No. 4						
Peak Inflow Rate	9.7 cfs	21.6 cfs	40.9 cfs	10.7 cfs	20.9 cfs	36.5 cfs
Peak Outflow Rate	2.4 cfs	5.4 cfs	12.2 cfs	2.7 cfs	5.4 cfs	10.7 cfs
Maximum Storage Volume Used	0.3 ac-ft	0.7 ac-ft	1.3 ac-ft	0.3 ac-ft	0.7 ac-ft	1.2 ac-ft
Detention basin No. 5						
Peak Inflow Rate	n/a	n/a	n/a	40.0 cfs	76.7 cfs	132.3 cfs
Peak Outflow Rate	n/a	n/a	n/a	0.9 cfs	3.0 cfs	4.2 cfs
Maximum Storage Volume Used	n/a	n/a	n/a	2.3 ac-ft	3.6 ac-ft	6.7 ac-ft

NOTES: Abbreviation n/a = not applicable; cfs = cubic feet per second; ac-ft = acre-foot

SOURCE: Graef, Anhalt, Schloemer & Associates, Inc., 2004.

The detention basins are sized to accommodate the additional runoff generated by the project development so that downstream runoff during the peak period is not increased. The basins will

allow for a controlled release of stormwater runoff as downstream capacity allows. Therefore, additional runoff from the project site will not significantly affect downstream drainage conditions. Mitigation measures to reduce project-related impacts to drainage volumes are discussed in **Section 5.0**.

Flooding

The Kilbourn Road Ditch passes through the western edge of the site. The City of Kenosha Flood Insurance Rate Map (FIRM) panel number 5502090006C shows the regulatory 100-year floodplain boundary and relative floodplain elevations within the property (see **Figure 3.3-2**). The elevations shown on the FIRM for the floodplain boundary differ from the elevations on the actual site. To determine impacts to the floodplain from the proposed development based on engineering criteria, the floodplain elevations were transcribed into a topographic survey and redrawn to match floodplain elevations existing onsite. **Figure 4.3-4** shows the location of the modified 100-year floodplain boundary on the proposed site plan, based on the elevations shown on the FIRM. No structures are proposed for development within the 100-year floodplain boundary. The plan also shows that the proposed grading will not impact the floodplain. A less-than-significant impact would occur and no mitigation is required.

WATER QUALITY

Surface Water Quality

Construction Impacts

Project construction would result in ground disturbance, which could lead to erosion. Erosion can increase sediment discharge to surface waters during storm events. Project construction also has the potential to discharge other construction related materials (concrete washings, oil, and grease) onto the ground and then into nearby surface waters during storm events. Construction would also involve the use of diesel-powered equipment and would likely involve the temporary storage of fuel and oil on-site. Discharges of pollutants to surface waters from construction activities and accidents are a potentially significant impact.

Discharges of stormwater from construction activities on the project site would be regulated by the USEPA NPDES storm water program and would require coverage under the Phase II General Permit for Storm Water Discharges from Construction Activities. To receive project authorization under the Construction General Permit, a Notice of Intent (NOI) must be submitted to the USEPA at least seven days prior to commencement of construction. In accordance with the requirements of the General Permit, the Tribe will prepare a SWPPP to control discharge of pollutants in stormwater. This plan will be kept onsite and will be available for review by the USEPA upon request. It will also include an inspection and monitoring section consistent with the requirements of the NPDES program. The plan will incorporate appropriate BMPs to prevent erosion and subsequent surface water degradation during construction activities. These measures

would include the use of silt fences, fiber rolls, vegetated swales, and construction area entrances and exits stabilized with crushed aggregate. **Section 5.0** provides a list of mitigation measures.

Operational Impacts

Stormwater Runoff

Stormwater runoff could affect surface water quality. Runoff from project facilities, especially surface parking lots, could flush trash, debris, oil, sediments, and grease into area surface waters, impacting water quality. Fertilizers and other chemicals used in landscaping areas could also result in impacts to water quality if allowed to enter nearby surface waters. To control operational storm water pollution and protect surface water quality, the project will utilize a combination of site planning, structural treatment BMPs and non-structural source control BMPs.

Site planning is discussed above and includes minimization of impermeable surfaces. In addition, the project would be designed to incorporate two main structural BMPs: the stormwater detention basins described above, and the use of sediment/grease traps prior to any discharge point to assure that surface runoff from the paved surfaces is filtered prior to release to the drainage system. The purpose of the structural BMPs is to control and reduce the Total Suspended Solids (TSS) and other potentially environmentally polluting mineral or materials such as oils and greases, nutrients and metals.

The sediment/grease traps would be designed to comply with Federal stormwater treatment guidelines to reduce TSS in post construction stormwater runoff as described in the USEPA National Management Measures Guidance to Control Nonpoint Source Pollution from Urban Areas (USEPA 842-B-02-003). This guidance document indicates that a reduction of TSS is assumed to control heavy metals, phosphorous, and other pollutants. Actual storm event monitoring data reported by Stormceptor®, a sediment/grease trap manufacturer, provides specific removal efficiencies for various pollutants. Detention basins fixed with a sediment/grease trap of equal effectiveness provide additional removal efficiency. A summary of the pollutant reduction efficiencies is listed in **Table 4.3-3**.

Numerical water quality objectives have been set for some of the expected pollutants. For pollutants that do not have numerical limits set, water quality objectives are narrative and require protection of beneficial uses. For these pollutants, drinking water maximum contaminant levels (MCL's) were chosen as limits that would be protective of beneficial uses. A comparison of the expected effluent with water quality objectives for the area shows that anticipated stormwater quality would meet all applicable water quality objectives. This comparison is provided in **Table 4.3-4**. **Section 5.0** discusses mitigation measures to reduce operational impacts to stormwater quality to less than significant levels.

TABLE 4.3-3
ESTIMATED STORMWATER QUALITY – ALTERNATIVE A

Pollutant	Anticipated Level in Storm water (mg/L) ^A	Stormceptor Reduction Efficiency ^B	Detention basin Reduction Efficiency ^C	Estimated Minimum Reduction Efficiency	Anticipated Discharge Pollutant Level (mg/L)
Total Suspended Solids	80	80%	30-65%	80%	16
Total Petroleum Hydrocarbon	3.5	80%	N/A	80%	0.70
Total Nitrogen	2	43%	15-45%	43%	<2
Zinc	0.14	39%	15-45%	39%	<0.1
Copper	0.01	28%	15-45%	28%	<0.01
Lead	0.018	51%	15-45%	51%	<0.01

Source: ^A National Management Measures to Control Nonpoint Source Pollution from Urban Areas, USEPA 842-B-02-003, July 2002.

^B Stormceptor® supplied performance studies, 2003.

^C Preliminary Data Summary of Urban Storm Water Best Management Practices, USEPA 821-R-99-02, August 1999.

TABLE 4.3-4
COMPARISON OF STORMWATER DISCHARGE AND DESIGN OBJECTIVES – ALTERNATIVE A

Pollutant	Anticipated Discharge Pollutant Level	Design Objective	Basis for Objective
Total Suspended Solids	16 mg/L 96% reduction	512 ppm 80% reduction	Objective based on USEPA recommended 80% reduction efficiency.
Total Nitrogen (NO ₃), as Nitrate and Nitrite	<1 mg/L	<10 ppm	Objective based on Wisconsin Primary Drinking Water Standard, which is expected to protect designated uses.
Zinc	<0.1 mg/L	<5.0 ppm	Objective based on Wisconsin Secondary Drinking Water Standard, which is expected to protect designated uses.
Copper	<0.01 mg/L	<1.3 ppm	Objective based on Wisconsin Primary Drinking Water Standard, which is expected to protect beneficial uses.
Lead	<0.01 mg/L	<15 ppm	Objective based on Wisconsin Primary Drinking Water Standard, which is expected to protect beneficial uses.

Abbreviations: ppm = parts per million; NO₃ = ammonia; USEPA = U.S. Environmental Protection Agency; mg/L = milligrams per liter

Source: ^A National Management Measures to Control Nonpoint Source Pollution from Urban Areas, USEPA 842-B-02-003, July 2002.

^B Stormceptor supplied performance studies, 2003.

^C Preliminary Data Summary of Urban Storm Water Best Management Practices, USEPA 821-R-99-02, August 1999.

^D Wisconsin State and Federal drinking water standards, 2004.

Wastewater

The Kenosha Water Utility (KWU) services the City of Kenosha and will provide water and wastewater service for the Proposed Project. The wastewater from the project's facilities would continue to be treated at the Kenosha Waste Water Treatment Plant (the Plant), which treats wastewater via oxidation ditches to limit biological oxygen demand (BOD), suspended solids, and phosphorous levels before discharging effluents to Lake Michigan. An oxidation ditch is a modified activated sludge biological treatment process that utilizes long solids detention times to remove biodegradable organics (USEPA, 2000). The oxidation ditch process is a fully demonstrated secondary wastewater treatment technology for removing effluent materials. All materials found in effluents at the plant during the month of November were below state regulations and yearly averages are consistently below set limits (Kerry, person. comm.). **Table 4.3-5** shows state effluent limitations and effluent rates for the plant from November 2004.

TABLE 4.3-5
KENOSHA WASTEWATER TREATMENT PLANT EFFLUENT QUALITY

	State Limitations	November 2004 Data
BOD	30 mg/L	17 mg/L
Suspended Solids	30 mg/L	16 mg/L
Phosphorous	1 ppm	0.8 ppm

Abbreviations: BOD = biological oxygen demand; mg/L = milligrams per liter; ppm = parts per million
SOURCE: Kerry Gloss, 2004.

The KWU is a municipally owned, fiscal independent public utility organized under authority of 66.068 of the Wisconsin State Statutes and Chapter XXXII of the City of Kenosha City Ordinances. It is solely financed by water and sewer service charges. Wastewater regulations depicted by the Kenosha City Code of Ordinances, Chapter 32.08, set forth uniform requirements for dischargers discharging into the wastewater collection facilities of the Water Utility and enables said Water Utility to comply with the Clean Water Act, as amended, (33 USC 1251, et seq) and the Pretreatment Regulations (40 CFR 403). Rule 08-02 (01-07) describes materials and locations that are prohibited for discharge into sanitary sewers, including the prohibition of unpolluted waters discharged into wastewater collection facilities, the prohibition of discharging into downspouts and sump pumps, and the prohibition of discharging several materials such as gasoline, non-shredded garbage, and primary pollutants as defined under Section 32.08. Although not under the authority of City regulations, the Tribe has agreed in the IGA that all sanitary sewers shall be designed and constructed in accordance with City and KWU ordinances and regulations. The Tribe would pay the usual wastewater disposal and improvement fees. Therefore significant adverse effects to surface water quality would not result from the continued discharge of wastewater to the KWU system. No mitigation measures are required for wastewater operations.

Groundwater Quality

Groundwater resources would not be utilized under Alternative A. The project would receive its water and wastewater services from KWU. No pumping of groundwater or discharge to groundwater would occur, and therefore there would be no significant effect from the project.

Runoff changes may increase stream volumes, increase stream velocities, increase peak discharges, shorten the time to peak flows, and lessen groundwater contributions to stream base-flows during non-precipitation periods. Runoff from a paved surface that has not been captured in a catch basin may enter the groundwater and transport contaminants. Fertilizers and pesticides that have been applied to landscaping could also enter the groundwater. Mitigation measures have been included in **Section 5.0** to assure that effects are minimized.

4.3.2 ALTERNATIVE B – REDUCED INTENSITY ALTERNATIVE

SURFACE WATER, DRAINAGE, AND FLOODING

Drainage

Construction of Alternative B would not increase impervious surfaces on the project site because the building footprint would remain the same. No significant construction activities outside of the building would occur. Drainage from the project would flow through the same network of storm sewers as currently exists, conveying runoff from north to south, discharging to one detention basin on the southeast side of the property. The stormwater management system for the existing site was designed in accordance with local requirements in effect at the time of construction and would not warrant modifications. No mitigation is required.

Flooding

No new structures are proposed for construction or redevelopment under Alternative B. Thus, the 100-year floodplain boundary would not be impacted and no mitigation is required.

WATER QUALITY

Surface Water Quality

Construction Impacts

Exterior construction activities are not proposed for Alternative B. Therefore, no impacts to surface water quality would occur from project-related construction and no mitigation is required.

Operational Impacts

Stormwater Runoff

Stormwater runoff from the project site under Alternative B would not substantially change because the area of impervious surfaces would not change from existing conditions. Water

quality of the Des Plaines River Watershed and associated tributaries would not be significantly impacted under Alternative B operations. Thus, the impact of stormwater runoff on water quality would be less than significant and no mitigation is required.

Wastewater

Wastewater would be treated by the KWU; information on the treatment plant and process is provided under the wastewater discussion in Alternative A. Materials found in effluents at the plant are consistently below set state limits. The Tribe has agreed to comply with the conditions of the KWU and adopt standards set forth by the Kenosha City Code of Ordinances regarding wastewater; therefore, the wastewater discharge for Alternative B would have a less than significant impact on the quality of surface water resources. The Tribe would pay the usual wastewater disposal and improvement fees. No mitigation is required.

Groundwater Quality

Groundwater resources would not be utilized under Alternative B. Wastewater from the project's facilities would be treated at the Kenosha Wastewater Treatment Plant, for which information is provided in Alternative A. The utilization of the Kenosha Wastewater Treatment Plant, coupled with the existing storage and discharge regime for the project site would assure that groundwater quality would not be significantly affected. Therefore, operation of Alternative B would not result in significant adverse effects to groundwater quality and no mitigation is required.

4.3.3 ALTERNATIVE C – KESHENA SITE ALTERNATIVE

SURFACE WATER, DRAINAGE, AND FLOODING

Drainage

Construction of Alternative C would increase impervious surfaces over approximately 5 acres of the site. Drainage from Alternative C would flow through the same network of storm sewers as currently exists at the Menominee Casino, conveying runoff through an underground system of concrete pipes flowing offsite into a low-lying field southeast of the casino property, eventually discharging to the Wolf River. Due to the rural/natural setting of the region and the minimal increase of impervious surfaces in comparison to the entire West Branch Wolf River Watershed, runoff volumes would not significantly increase and no mitigation is required.

Flooding

No structures from Alternative C are proposed for development within the 100-year floodplain boundary of the Wolf River. In addition, the project site is located more than 1,000 feet from the floodplain boundary and is situated at an elevation 40 feet higher than the 100-year floodplain high water mark. This would be a less than significant impact and would not require mitigation.

WATER QUALITY

Surface Water Quality

Construction Impacts

Construction impacts of Alternative C would be similar to the Proposed Alternative. As is the case with the Proposed Alternative, construction activities on the project site would require compliance with the USEPA NPDES General Permit for Storm Water Discharges From Construction Activities. BMPs to prevent erosion and subsequent surface water degradation would also be employed during the construction of Alternative C. Please see **Section 4.3.1** for further discussion regarding construction impacts. Mitigation measures are described in **Section 5.0** of this document and would reduce construction-related effects to a less than significant level.

Operational Impacts

Stormwater Runoff

Due to the minimal increase in impervious surfaces, runoff volumes would not significantly increase. However, future runoff from parking lots and other impervious surfaces may impact the water quality of the Wolf River. Typical pollutants found in urban runoff include soil erosion, excess nutrient transport, oils and greases, and a variety of metals. To control water quality from project site runoff, appropriate BMPs would be applied to reduce TSS in compliance with USEPA standards. Removal of TSS would control heavy metals, phosphorus, and other pollutants and would reduce project-related impacts to water quality to a less than significant level. Please see **Section 5.0** for a list of mitigation measures.

Wastewater

The Menominee Tribal Utility Department (MTUD) currently services the Menominee Casino and would continue to provide water and wastewater service for Alternative C. The wastewater from the project's facilities would continue to be treated at the wastewater treatment plant located in Keshena, which treats wastewater via oxidation ditches to limit biological oxygen demand (BOD), suspended solids, and phosphorous levels before discharging effluents to a wetland. The oxidation ditch process is a fully demonstrated secondary wastewater treatment technology for removing pollutants from effluent. The MTUD facilities manager has indicated that BOD, total suspended solids, and phosphorus levels are all within USEPA standards (David Corn, person. comm.). Wastewater and drinking water standards would comply with MTUD regulations as enforced by the Menominee Tribal Ordinances and USEPA standards. The continued use of MTUD facilities for wastewater disposal would not result in significant adverse effects to surface water quality and no mitigation is required.

Groundwater Quality

Groundwater resources would continue to be utilized under Alternative C. The project would receive its potable water from MTUD, which utilizes one underground well for water supply.

The groundwater well contains a filtration system for iron removal and adds chlorine and fluoride to treat bacteria, in accordance with USEPA and Indian Health Service standards. No drinking water contaminant levels were violated from 1995 to the present (**Table 3.3-5**). Implementation of Alternative C would not significantly affect groundwater quality in regards to potable water supply. Please see **Section 4.9** Public Services for further discussion of groundwater supply capacities. Drinking water standards would continue to comply with MTUD regulations as enforced by the Menominee Tribal Ordinances and USEPA standards.

MTUD would also provide wastewater service to the project's facilities. Wastewater effluent would be treated offsite at a fully operational wastewater treatment plant. Wastewater effluent quality standards would comply with MTUD regulations as enforced by the Menominee Tribal Ordinances and USEPA standards. Because the wastewater would be treated to Federal water discharge standards at an offsite tribal wastewater treatment plant, the effluent is expected to meet standards defined by the USEPA and WDNR and would not affect groundwater quality.

Runoff from paved surfaces may enter the groundwater and transport contaminants. Fertilizers and pesticides that have been applied to landscaping could enter the groundwater. Alternative C contains the same groundwater hazards from surface runoff as Alternative A. See **Section 4.3.1** for additional information regarding contamination prevention. Mitigation measures are included in **Section 5.0** to assure that effects to groundwater quality are minimized.

4.3.4 ALTERNATIVE D – HOTEL-CONFERENCE CENTER AND RECREATIONAL DEVELOPMENT

SURFACE WATER, DRAINAGE, AND FLOODING

Drainage

Construction of Alternative D would create impervious surfaces over approximately 9 acres of the site, an increase from 78 acres to 87 acres of buildings and pavement. Impervious surfaces would be minimized to the greatest extent feasible. Drainage from the project would flow through the same network of storm sewers as Alternative A, conveying runoff from north to south, discharging to detention basins on the west and south side of the existing DGP. Modifications of Detention basin No. 1 and the addition of Detention basin No. 4 are the same for Alternative D and Alternative A. **Table 4.3-2** shows that the proposed site, not including the undeveloped Subarea 60, would meet the City's watershed-specific criteria for storm water discharge rate. Additional runoff from the project site would not significantly affect downstream runoff volumes. Please refer to **Section 4.3.1** for further detail regarding on-site drainage.

The preliminary grading plan for Alternative A is also applicable to Alternative D. **Figure 4.3-3** shows the preliminary grading plan for the proposed site. Grading of the east side of the site would be similar to existing conditions, with most of the site draining to Detention basin No. 1 in

the southeast corner of the site. The grading of the west side of the site would allow most of the drainage to flow towards Detention basin No. 4. **Section 5.0** includes mitigation measures to assure that drainage effects are minimized.

Flooding

No structures are proposed for development within the 100-year floodplain boundary (**Figure 4.3-4**). Proposed grading would not impact the floodplain. A less-than-significant impact would occur and no mitigation is required.

WATER QUALITY

Surface Water Quality

Construction Impacts

Construction impacts are the same as those described under Alternative A which include ground disturbance which could lead to erosion and sediment discharge to surface water, as well as discharge of construction related materials. Construction activities on the project site require compliance with USEPA NPDES General Permit for Storm Water Discharges From Construction Activities. BMPs to prevent erosion and subsequent surface water degradation would also be employed during the construction of Alternative D. Construction impacts would be considered significant. Mitigation is identified in **Section 5.0** to reduce construction impacts to surface water quality to less than significant levels.

Operational Impacts

Stormwater Runoff

Runoff from project facilities, especially surface parking lots, could flush trash, debris, oil, sediments, and grease into area surface waters, impacting water quality. Please see **Section 4.3.1** for a detailed discussion regarding stormwater runoff.

Project site runoff quality would not exceed applicable water quality objectives for pollutants of concern and for the protection of beneficial uses of downstream waters. Reduction goals for nutrient levels would be met through source control measures. Alternative D would result in less than significant effects to surface water quality. Mitigation Measures are discussed in **Section 5.0**.

Wastewater

Wastewater would be treated by the KWU; information on the treatment plant and process is provided under the wastewater discussion in Alternative A. Materials found in effluents at the plant are consistently below set state limits. The Tribe has agreed to comply with the conditions of the KWU and adopt standards set forth by the Kenosha City Code of Ordinances regarding wastewater; therefore, the wastewater discharge for Alternative D would have a less than

significant impact on the quality of surface water resources. The Tribe would pay the usual wastewater disposal and improvement fees. No mitigation is required.

Groundwater Quality

Groundwater resources would not be utilized under Alternative D. Wastewater from the project's facilities would be treated at the Kenosha Wastewater Treatment Plant, for which information is provided in Alternative A. Operation of Alternative D would not result in significant adverse effects to ground water quality. Refer to **Section 4.3.1** for further discussion regarding groundwater quality.

Alternative D contains the same groundwater hazards from surface runoff as Alternative A, which include transportation of contaminants and impacts from fertilizers and pesticides entering the groundwater. Mitigation measures are included in **Section 5.0** to assure that effects to groundwater quality are minimized.

4.3.5 ALTERNATIVE E – NO ACTION

SURFACE WATER, DRAINAGE, AND FLOODING

Drainage

No impacts on drainage would occur under Alternative E, and no mitigation is required.

Flooding

No flooding-related impacts would occur under the No Action Alternative, and no mitigation is required.

WATER QUALITY

Surface Water Quality

Construction Impacts

The No Action Alternative would not result in any site grading, construction, or any other impact. No mitigation is required.

Operational Impacts

Stormwater Runoff

Surface water supplies would continue to be susceptible to contamination from runoff from the DGP. The surface water quality control measures necessary for the construction and operation of Alternatives A through D would not be necessary for the No Action Alternative because no new development would occur. Because existing land uses and configuration would persist, the stormwater management of the subject parcel would continue to operate below current standards. No mitigation is required on the part of the BIA.

Wastewater

The No Action Alternative would not generate increased wastewater. Therefore no impacts would occur. No mitigation is required.

Groundwater Quality

The No Action Alternative would not result in additional impacts to groundwater quality. Under Alternative E, the current property would continue to obtain its water supply from the KWU. No mitigation is required.